

## REMARKS

In the present application, claims 1-48 are pending. All of the claims have been rejected. Claims 1, 17 and 33 have been canceled. Claims 2-16, 18-32 and 34-48 have been amended. Claims 49-51 have been added. The subject matter of new claims 49, 50 and 51 correspond to the subject matter of canceled claims 1, 17 and 33, respectively. No new matter has been added to the specification.

### **I. Transitional Phrases**

The Examiner stated, in sections 2, 6 and 10 of the Office Action, that "the claims do not contain a traditional transitional phrase" as required by MPEP § 2111.03. Applicants have canceled independent claims 1, 17 and 33. New independent claims 49-51, which all include the traditional transition phrase "comprising." Accordingly, Applicants believe that the claims pending in this application now comply with MPEP § 2111.03.

### **II. Claim Rejections under 35 U.S.C. §103**

#### ***I. Rejection of Claims 1-16 under 35 U.S.C. §103(a)***

Claims 1-11, 15 and 16 were rejected under 35 U.S.C. §103(a) as being unpatentable over Moss, U.S. Patent No. 4,517,162 ("Moss"). Claim 12 was rejected under 35 U.S.C. §103(a) as being unpatentable over Moss in view of Butt, European Patent No. EP 0 144 172 A2 ("Butt"). Claim 13 was rejected under U.S.C. §103(a) as being unpatentable over Moss in view of Butt and further in view of Voegeli, U.S. Patent No. 3,978,176 ("Voegeli"). Claim 14 was rejected under U.S.C. §103(a) as being unpatentable over Moss in view of Butt and further in view of Wietzke, U.S. Patent No. 6,029,612 ("Wietzke"). Applicants traverse the rejection. Applicants canceled independent claim 1 and introduced new independent claim 49, which contains substantially the same subject matter. Dependent claims 2-16 were amended to directly or indirectly depend from new independent claim 49.

The Examiner states that Moss discloses a fluidized bed reactor (10) having gas injection nozzles (17, 47) on a gas distributor in the lower part of the reactor, partitions (11, 14) that form

compartments (16, 41) in the bed, connecting holes (19, 24) in the lower quarter of the bed, and slopes (20, 25) that are greater than the angle of repose of the bed particles. However, Moss does not teach or suggest a "reactor system comprising . . . a plurality of gas distribution ports positioned in a uniform horizontal plane in said floor; and a plurality of gas injecting nozzles . . . having a uniform gas flow rate to move said raw material fines from an inlet of said reactor to a discharge of said reactor" as now claimed in claim 49. Rather, Moss discloses a reactor having upper base sections (28, 44) and lower base sections (23, 43) positioned at varying heights in the lower part of the reactor. See Moss, FIG. 1. Moss also discloses:

[t]he rate of supply of fluidizing gas to the plenum 18b is such that the part of the fluidized bed 16 above the lower base section 23 and the nozzles 17 thereon is vigorously fluidized so that solids are removed from the lower end of the entrance ramp 20 by fluidization or a gas-lift effect . . .

See Moss, col. 5, ll. 54-59.

Moss further discloses:

[t]he rate of gas injection from the nozzles 17 of base section 23 is preferably sufficiently high to cause substantially uniform mixing of the fuel and the bed solids so that they can interact chemically and/or physically relatively readily. The rate of gas injection from the nozzles 17 of the base section 28 is preferably lower so that, in the absence of any baffles promoting mixing, carbonaceous fuel solids would tend to separate into a fuel solids rich stratum at the top of the bed 16 above the base section 28.

See, Moss, col. 6, ll. 43-52.

Therefore, Moss teaches a reactor having base sections with varying heights used in combination with varying fluidizing gas flow rates based on the heights and positions of the base sections in order to move solids in the reactor and/or to provide mixing or separation sections within the reactor. This is distinctly different than Applicants' invention as now claimed.

Further, Moss does not teach or suggest first, second and third compartments having first, second, and third fluidized beds wherein the third bed has a height that is lower than the height of the second bed and the second bed has a height that is lower than the height of the first bed. At best, Moss discloses two beds having different heights.

Accordingly, Applicants respectfully assert independent claim 49 is not obvious over Moss and request allowance of claim 49. Because claims 2-16 depend from an allowable base claim, Applicants also respectfully request allowance of these claims.

***2. Rejection of Claims 17-32 and 33-48 under 35 U.S.C. §103(a)***

Claims 17-27, 31 and 32 were rejected under 35 U.S.C. §103(a) as being unpatentable over Moss in view of Asai et al., U.S. Patent No. 4,460,330 ( "Asai"). Claim 28 was rejected under 35 U.S.C. §103(a) as being unpatentable over Moss in view of Asai and further in view of Butt. Claim 29 was rejected under U.S.C. §103(a) as being unpatentable over Moss in view of Asai and Butt, and further in view of Voegeli. Claim 30 was rejected under U.S.C. §103(a) as being unpatentable over Moss in view of Asai and Butt and further in view of Wietzke. Claims 33-43, 47 and 48 were rejected under 35 U.S.C. §103(a) as being unpatentable over Moss in view of DeFeo et al., U.S. Patent No. 4,378,744 ("DeFeo"). Claim 44 was rejected under 35 U.S.C. §103(a) as being unpatentable over Moss in view of DeFeo and further in view of Butt. Claim 45 was rejected under 35 U.S.C. §103(a) as being unpatentable over Moss in view of DeFeo and Butt and further in view of Voegeli. Claim 46 was rejected under 35 U.S.C. §103(a) as being unpatentable over Moss in view of DeFeo and Butt and further in view of Wietzke. Applicants traverse the Examiner's rejections.

Applicants canceled independent claims 17 and 33 and introduced new claims 50 and 51. The claimed subject matter from canceled claims 17 and 33 is substantially the same as new claims 50 and 51, respectively. The dependencies of claims 18-32 and 34-48 were amended accordingly.

The Examiner again cited Moss stating that Moss discloses the claimed fluidized bed reactor. In addition, the Examiner cited Asai and DeFeo to provide supplemental teaching for a fluidized bed device with distribution nozzles that inject gas horizontally or obliquely downward, respectively, into the bed allowing for higher temperatures and more accurate positioning within the bed. The combination of Moss with Asia or DeFeo is deficient because these references, taken alone or in combination, fail to teach or suggest all of the limitations of Applicants'

invention as claimed in claims 50 and 51 for the same reasons claim 49 is not obvious over Moss.

Based on the foregoing, Applicants respectfully request allowance of independent claims 50 and 51. Because dependent claims 18-32 and 34-48 depend from allowable base claims 50 and 51, Applicants also respectfully request that these claims be allowed.

### CONCLUSION

Applicants respectfully submit that this Amendment and Response addresses all of the Examiner's rejections and places the Application in condition for allowance. A Notice of Allowance is earnestly solicited. If the Examiner believes that a teleconference would be of value in expediting the allowance of the pending claims, the undersigned can be reached at the telephone number listed below. Applicants request a two-month extension of time to respond to the present office action, the three-month statutory period having expired on April 9, 2006 and this response being filed on May 31, 2006. Accordingly, Applicant authorizes the Commissioner to charge a two-month extension fee to Deposit Account No. 50-1901 (Reference No. 490042-87). If any additional fees are necessary, the Commissioner is also authorized to charge or credit any such fees or overpayment to the aforementioned account number.

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Respectfully submitted,

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